

a third tracking filter 5, a third high-frequency amplifier 8, a first mixer 9, a filter 13, an intermediate-frequency amplifier 14, an output terminal 15 of the tuner, a first programmable divider 16, a local oscillator 19, a PLL IC 20, a quartz oscillator 21 and a resonance circuit 22.

To receive a UHF TV signal, a band selection signal Vu for receiving UHF is output from the PLL IC 20, a band selection signal Vhi for receiving VHF high-band and a band selection signal Vlo for receiving VHF low-band are not output, the first preamplifier 6 is activated and the second preamplifier 7 and the third preamplifier 9 are not activated. In this state, a TV signal received by the antenna 1 is tuned by the first tracking filter 3 and amplified by the first preamplifier 6. The first tracking filter 3 is a multi-tuning circuit and its tuning frequency is changed by a tuning voltage Vt output from the PLL IC 20 and tuned to the frequency band of a channel to be received. Since the first preamplifier 6 is a low-noise amplifier having an AGC function, even when a signal applied to the first preamplifier 6 is at a low level, NF does not deteriorate. Therefore, even when the first tracking filter 3 having high input impedance is connected after the antenna 1 having low output impedance, the NF of the output of the first preamplifier 6 does not deteriorate.

To receive a VHF high-band TV signal, a band

selection signal Vhi for receiving VHF high-band is output from the PLL IC 20, a band selection signal Vu for receiving UHF and a band selection signal Vlo for receiving VHF low-band are not output, the second preamplifier 7 is activated, and the first preamplifier 6 and the third preamplifier 8 are not activated. In this state, a TV signal received by the antenna 1 is tuned by the second tracking filter 4 and amplified by the second preamplifier 7. The second tracking filter 4 is a multi-tuning circuit and its tuning frequency is changed by a tuning voltage Vt output from the PLL IC 20 and tuned to the frequency band of a channel to be received. Since the second preamplifier 7 is a low-noise amplifier having an AGC function, even when the signal input into the second preamplifier 7 is at a low level, NF does not deteriorate. Therefore, even when the second tracking filter 4 having high input impedance is connected after the antenna 1 having low output impedance, NF of the output of the second preamplifier 7 does not deteriorate.

To receive a VHF low-band TV signal, a band selection signal Vlo for receiving VHF low-band is output from the PLL IC 20, a band selection signal Vu for receiving UHF and a band selection signal Vhi for receiving VHF high-band are not output, the third amplifier 8 is activated, and the first preamplifier 6 and the second preamplifier 7 are not activated. In this state, a TV signal received by the antenna 1 is tuned by the third

tracking filter 5 and amplified by the third preamplifier 8. The third tracking filter 5 is a multi-tuning circuit and its tuning frequency is changed by a tuning voltage V_t output from the PLL IC 20 and tuned to the frequency band of a channel to be received. Since the third preamplifier 8 is a low-noise amplifier having an AGC function, even when the signal input into the third preamplifier 8 is at a low level, NF does not deteriorate. Therefore, even when the third tracking filter 5 having high input impedance is connected after the antenna 1 having low output impedance, NF of the output of the third preamplifier 8 does not deteriorate.

The TV signal output from the first preamplifier 6, the second preamplifier 7 or the third preamplifier 8 is applied to the first mixer 9. The first mixer 9 mixes the TV signal and a local oscillation signal having a frequency 44 MHz higher than the TV signal and outputs a 44 MHz intermediate-frequency signal.

The intermediate-frequency signal is applied to the filter 13. The filter 13 is a band-pass filter having sharp characteristics and connected to the intermediate-frequency amplifier 14. The intermediate-frequency signal amplified by the intermediate-frequency amplifier 14 is output from the output terminal 15 of the tuner.

The local oscillation signal output from the local oscillator 19 is applied to the first mixer 9 after it